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AUTHOR Fyans, Leslie J., Jr.
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ABSTRACT

This study examined the influence of an individual's attributions upon the type of tasks that individuals would select. Questions guiding this study concerned the predictability (congruence) of tasks from attributions, the consistency of this task-attribution congruency, and the generalizability of the results. Subjects were 801 students drawn from nine grade levels and both rural and urban settings. First their attributions were assessed by two different instruments. Later, they were placed in situations in which they had to select between several tasks cued with divergent information. The results showed that one could predict a student's task selection from his attributions. Secondly, this congruence between the task selected and attribution was consistent and unaffected by assignment of success or failure outcomes. Finally, these results were found to be generalizable across fourth through twelfth grades, rural and urban settings, and both sexes. Implications for individualizing education and future personality research were discussed. (Author)

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University of Illinois-Champaign

Leslie J. Fyans, Jr.
210 Education Bldg.

Attributional Self-Selection and the Implications for the Individualization of Education..

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Statement of the Problem

Mischel in two publications (1968, 1969), proposed that behaviour is situationally specific and that the primary cause of behaviour is the environmental stimuli which press each individual. Most past attributional research was conducted from Mischel's viewpoint (McMahan, 1973; Weiner, Heckhausen, Meyer, and Cook, 1972). However, from both philosophical and empirical grounds, Endler (1973, 1975) and Bowers (1973) showed that Mischel's situationist position is as untenable as the classic trait position and that the major source of behavioural variance is in the interaction of personality traits with environmental variables. Wachtel (1972) contends this interaction is in the form of a self-selective process in that individuals with different personality traits will select different types of environments in which to become involved. While Wachtel's self-selection theory is supported by past research in other areas (socialization: Bell, 1968; educational: Fiedler, 1975; Bereiter and Freedman in Sanford, 1962; career: Holland, 1973), it has not been examined in relation to attribution theory.

A "self-selection" approach to attribution theory would be especially valuable relative to individualizing education. Students' attributions could be used to determine which individuals would be given a less structured more self-guided education and which students should be given a more structured education

with feedback designed to bolster their self-reliance (Dweck, 1975).

The present study investigated the relationship between an individual's attributions and that individual's subsequent selections of tasks and the influence of task outcome, grade level, sex, and culture upon that relationship. The present investigation was guided by three major questions, each of which it sought to answer.

The first research question was the congruence question. It asked, "How well can one predict task selections from an individual's attributions?" One would expect good prediction if the attributions and selections were congruent.

The second question was the consistency question. The major interest here was, "will this matchup (or congruence) between attributions and task selections occur repeatedly?" Also of importance here is the influence of outcome after performance on task upon subsequent levels of congruence.

The final question was the generalizability question. This question asked whether the level of congruence would be stable across educational levels (fourth through twelfth grades), sexes (males and female), and cultures (rural and urban).

These three questions guided the selection of subjects and data analysis.

Methods

Subjects

A total of 801 students in grade levels ranging from fourth through twelfth grades participated in this study. Seven schools contributed their students: three elementary, three junior high, and one senior high school. Students were drawn from both a rural school system and an urban school district. Table 1 specifically delineates where the subjects came from. Students were sampled from these two educational cultures and from all the grade levels to facilitate the investigation of the generalizability of this study's results.

Insert Table 1 about here

Materials

Two types of instruments were employed to assess the subjects attributions: a forced choice questionaire and a free response measure. On both measures, both failure and success situations were described and subjects could attribute to either ability, effort,or task-difficulty-luck within each situation. (On the questionaire the task difficulty-luck attributions were meshed since pretesting indicated no ascriptions to luck alone; but always being modified by a task description.

Procedure

In classroom settings, the subjects were administered both the forced choice questionaire and picture completion

measure to assess their attributions. The measures were presented in a counter-balanced design to control for any influence that answers on one measure might have upon the responses on the other.

The second phase of the experiment began two weeks after the aforementioned assessment. During this second phase, each subject was taken individually to a room, presented with three boxes, told that each box contained a game of equal difficulty. The experimenter explained, however, that in one game one did best by trying hard, in a second by knowing what to do, and in a third by being lucky. The subject was asked to select which game he liked best. The subject was then asked which game he liked second best.

Each box contained identical angle-matching tasks which required the subject to match an angle printed on a card to one of five remaining angles. In actuality, none of the angles matched exactly.

After the students had given their "second best" rankings the box they chose first was opened and they performed the enclosed angle matching task.

The students were randomly assigned success or failure independent of their performance upon the angle matching task. If they were to receive success they were told "That's good; you have done very well." If they were assigned failure they were told "That's bad; you have not done very well."

The experimenter then replaced the cards in the box, removed it, and put three new boxes on the table. The instructions were the same as with the first presentation. Again the subjects gave their first and second choices. The experimented recorded the student's two choices; he then opened the box chosen first while removing the other two boxes. Following this the students were all randomly assigned success independent of their matching performance. The experimenter took the student back to his classroom.

Analyses

I. Congruency Question

While each student selected only two games, there were three possible groupings of games which could be matched with attributions. One grouping was the first game selected by each student. Before the second game selection, each student was assigned either success or failure. There were two possible groups of second selections: those selections of students assigned success outcomes and those selections of students assigned failure. Thus, there were three prediction situations to predict selections from attributions. However, since present data were essentially nominal a Pearson's product-moment correlation coefficient could not be calculated. Rather, the degree of predictive association was ascertained by the use of the statistic lambda (λ) as described by Hays (1973). The

interpretation of lambda is analogous to the interpretation of r^2_{xy} except in the lambda is asymmetric like w^2 and η^2.

II. Consistency Question

An ANOVA was calculated employing as the independent factor the outcome (success or failure) which was randomly assigned after the subjects first selection. The dependent factors were the students second selection and difference scores reflecting the discrepancy between their first and second selections.

III. Generalizability Question

To answer the issues addressed by this question several factorial ANOVA's were calculated employing grade level, sex, and culture as independent variables. The dependent variables were scores developed to reflect the congruency between each students selection and their attributions and the difference between the congruency level at the first versus the second selection occasions. The sum of squares for each dependent variable was then transformed into a generalizability coefficient (ie. Golding, 1975; Cronbach et al., 1972) in order to directly show the generalizability of attributional self-selection across grade levels, sex, and culture.

Results

I. Congruency Question

The lambda values between attributions and game selections

are given in Table 2.

Insert Table 2 about here

The values in Table 2 (except for those in brackets) reflect the predictability of choice of effort and ability games given knowledge of an individual's effort and ability attributions. The luck ascriptions were not included in the computation since at most grade levels only about 1% of the attributions were to luck. However, the values in brackets in Table 2 indicate predictability when knowledge of ascription to luck was also used in calculating lambda.

By averaging across the rows of Table 2 a mean lambda value can be estimated for each age level. This "mean lambda" (λ) would express the average amount of reduction in predication error per grade level. Those mean lambdas are given in Table 3.

Insert Table 3 about here

It becomes quite easy to interpet the values in Table 3 if it is remembered that their interpetation is analogous to the interpetation of an r_{xy}^2. For example, the lowest mean lambda values occur at grades five and ten where $\bar{\lambda} \cong .16$ (15%). Remembering that a r_{xy}^2 to reduce error in prediction by .16 (16%), one has to begin with an original correlation of rxy - .40.

Thus, these lambda statistics even at their lowest values, indicate that one can predict quite well a students specific game selections from his attributions. This finding is enhanced by all the other values in Table 3 which range from .38 to .56. Since to attain a r_{xy}^2 of .56, one needs a correlation of .74, the answer to the first research question is that one can well predict students game selections given knowledge of their attributions.

II. Consistency Question

Table 4 presents these results.

Insert Table 4 about here

Table 4 shows that the level of congruency between attributions and game selections was not significantly different between first and second selections and that the level was quite consistent regardless of success or failure upon the first angle matching task. Question two was answered affirmatively in that the level of congruency remained consistent at the second selection.

III. Generalizability Question

Data relevant to question three are given in Tables 5, 6, and 7.

Insert Tables 5, 6, and 7 about here

As these tables indicate, there is a minimal amount of variation in congruency across grade levels, sex, and environments. Thus there is a high degree of correlation between the levels of congruency in both rural and urban settings, for both males and females, and from fifth through twelfth grades.

Conclusion

While crossvalidations of these results are needed to more fully determine their veridicality, the results of the present study are clear. This study found an interaction between an individual's attributions and selection of tasks much as Wachtel's (1972) model would have suggested. Given information on an individual's attributions, one is able to predict which "game" that individual would select. Of equal importance are the findings that this predictability is quite consistent and unaffected by immediate task outcome. This phenomena appears to be pervasive occuring at approximately the same levels in both sexes, in both rural and urban settings, and in fifth through twelfth grades. It is thus necessary to reassess the individualization of education from a self-selection approach especially in relation to a students attributions. This individualization could be modified by the use of attributions by placing students who attribute their successes to ability (or effort) in less structured, more open educational environments; students attributing their successes to external

factors and failures to inability could be educated in an environment structured so as to facilitate their attributional retraining (ie Dweck, 1975) and thus their academic achievement.

It is also necessary to again recognize as do Bowers (1973) and Endler (1973, 1975), that the best predictability of human behavior occurs in the interaction of the individual with the environment rather than in the environmental stimuli which press each individual.

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TABLE 1

BREAKDOWN OF SUBJECT SAMPLE RELATIVE TO GRADE, SEX, AND SCHOOL SYSTEM

	School System			
	Champaign-Urbana		Hoopeston-East Lynn	
Grade Level	Male	Female	Male	Female
Grade Four	19	19	--	--
Grade Five	35	37	54	53
Grade Six	48	41	56	54
Grade Seven	11	10	10	18
Grade Eight	10	10	10	12
Grade Nine	14	10	11	17
Grade Ten	12	12	--	--
Grade Eleven	8	6	--	--
Grade Twelve	9	9	--	--

TABLE 2

DEGREE OF PREDICTIVE ASSOCIATION (λ) BETWEEN ASCRIPTIONS FOR SUCCESS OR FAILURE TO EFFORT AND ABILITY AND EFFORT AND ABILITY GAME SELECTIONS, BY GRADE LEVEL

Grade Level	First Selection	Second Selection After Success	Second Selection After Failure
Grade Five	[.1795]	.0900	.2220
Grade Six	.3478	.4000	.4000
Grade Seven	.2500	.6000	.5000
Grade Eight	[.0833]	.750	[.0833]
Grade Nine	.1428	.5000	.3333
Grade Ten	[.1420]	.3333	.0000
Grade Eleven	.3830	.2500	.6666
Grade Twelve	.1425	.5000	.5000

TABLE 3

MEAN $\bar{\lambda}$ VALUES ($\bar{\lambda}$) PER EACH GRADE LEVEL OBTAINED WHEN AVERAGING OVER ALL SELECTIONS

Grade Level	
Grade Five	.1634
Grade Six	.3826
Grade Seven	.5333
Grade Eight	.3033
Grade Nine	.4362
Grade Ten	.1583
Grade Eleven	.5608
Grade Twelve	.3808

TABLE 4

EFFECTS OF RANDOMLY ASSIGNED OUTCOME (SUCCESS OR FAILURE) UPON LEVEL OF SECOND CONGRUENCY SCORE AND CONGRUENCY-DIFFERENCE SCORES

Dependent Variable	SS	df	Mean Square	F Ratio	P(rounded)
Congruency Score 2(PS):					
Between Ss	.05421126	1	.005421126	.009	.92
Within Ss	145.29062	242	.60037446		
Congruency Score 2(PF):					
Between Ss	.56691416	1	.56691416	.9027	.34
Within Ss	139.42076	222	.62802143		
Congruency Score 2(QS):					
Between Ss	.008209075	1	.008209075	.0143	.90
Within Ss	156.65742	254	.61676149		
Congruency Score 2(QF):					
Between Ss	.050196654	1	.050196654	.0824	.77
Within Ss	139.55692	229	.60941887		
Congruency Difference Score(PS):					
Between Ss	.43203423	1	.43203423	.3711	.54
Within Ss	281.74794	242	1.1642477		
Congruency Difference Score(PF):					
Between Ss	.32727254	1	.32727254	.2539	.61
Within Ss	286.14349	222	1.2889346		
Congruency Difference Score(QS):					
Between Ss	.11111960	1	.11111960	.0947	.75
Within Ss	298.18136	254	1.1739424		
Congruency Difference Score(QF):					
Between Ss	.26842742	1	.26842742	.2149	.64
Within Ss	286.00536	229	1.2489317		

Table 5

Generalizability Coeffiecients Of Dependent Variables

For Generalizing Over Grade Levels

Dependent Variable	Generalizability Coefficient
Congruency Score 1 (PS)	1.00
Congruency Score 1 (PF)	1.00
Congruency Score 1 (QS)	1.00
Congruency Score 1 (QF)	.99
Congruency Score 2 (PS)	.99
Congruency Score 2 (PF)	1.00
Congruency Score 2 (QS)	.99
Congruency Score 2 (QF)	.99
Congruency Difference Score (PS)	1.00
Congruency Difference Score (PF)	1.00
Congruency Difference Score (QS)	1.00
Congruency Difference Score (QF)	1.00

Table 6

Generalizability Coefficients Of Dependent Variables

For Generalizing Over Sex

Dependent Variable	Generalizability Coefficients
Congruency Score 1 (PS)	1.00
Congruency Score 1 (PF)	1.00
Congruency Score 1 (QS)	1.00
Congruency Score 1 (QF)	.99
Congruency Score 2 (PS)	.99
Congruency Score 2 (PF)	.99
Congruency Score 2 (QS)	.99
Congruency Score 2 (QF)	.99
Congruency Difference Score (PS)	1.00
Congruency Difference Score (PF)	1.00
Congruency Difference Score (QS)	.99
Congruency Difference Score (QF)	1.00

Table 7

Generalizability Coefficients Of Dependent Variables For Generalizing Over School Environments (Rural or Urban)

Dependent Variable	Generalizability Coefficient
Congruency Score 1 (PS)	.99
Congruency Score 1 (PF)	1.00
Congruency Score 1 (QS)	.99
Congruency Score 1 (QF)	.99
Congruency Score 2 (PS)	1.00
Congruency Score 2 (PF)	1.00
Congruency Score 2 (QS)	1.00
Congruency Score 2 (QF)	1.00
Congruency Difference Score (PS)	.99
Congruency Difference Score (PF)	1.00
Congruency Difference Score (QS)	1.00
Congruency Difference Score (QF)	1.00